

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

Paper No. 28

**UNITED STATES PATENT AND TRADEMARK OFFICE**

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

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Ex parte HIROYUKI ONO, ATSUSHI SAITO and ISAO OHTA

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Appeal No. 2002-1764  
Application No. 09/359,752

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HEARD: SEPTEMBER 10, 2003

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Before COHEN, STAAB and BAHR, Administrative Patent Judges.  
BAHR, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal from the examiner's final rejection of claims 1-22, which are all of the claims pending in this application.

We REVERSE.

### BACKGROUND

The appellants' invention relates to a sporting rod member using a solid rod (specification, page 1). A copy of the claims under appeal is set forth in the appendix to the appellants' brief.

The examiner relied upon the following prior art references of record in rejecting the appealed claims:

Cosby	Re 16,118	Jul. 21, 1925
Hogarth	3,974,012	Aug. 10, 1976
Kusumoto	5,427,373	Jun. 27, 1995
Okada	5,968,621	Oct. 19, 1999
		(filed Aug. 11, 1997)
Herber	5,865,684	Feb. 02, 1999
		(filed May 01, 1997)

The following rejections are before us for review.

Claims 1-3 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Okada in view of Herber and Cosby.

Claims 4-22 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Okada in view of Herber, Cosby, Kusumoto and Hogarth.

Rather than reiterate the conflicting viewpoints advanced by the examiner and the appellants regarding the above-noted rejections, we make reference to the final rejection and answer (Paper Nos. 9 and 14 ) for the examiner's complete reasoning in support of the rejections and to the brief and reply brief (Paper Nos. 13 and 16) for the appellants' arguments thereagainst.

### OPINION

In reaching our decision in this appeal, we have given careful consideration to the appellants' specification and claims, to the applied prior art references, and to the respective positions articulated by the appellants and the examiner. As a consequence of our review, we make the determinations which follow.

The examiner has rejected claims 1-3 as being unpatentable over the combination of Okada in view of Herber and Cosby. Each of these claims recites a sporting rod member using a solid rod, with the solid rod comprising a solid-state<sup>1</sup> core member and an outer layer formed of fiber reinforced resin.

Okada, the jumping-off point of the examiner's rejection, discloses a tubular member comprising a plurality of wound layers of prepreg for use as a fishing rod, a golf club shaft or the like. Each of the prepreg layers is formed of carbon fiber and resin, with the particular combination of carbon fibers being selected to achieve sufficient flexibility and strength (see column 4, lines 51-64). Okada's tubular member does not include a solid core, as called for in each of claims 1-3.

Herber discloses a golf club shaft "constructed of any well known flexible material having an acceptable shaft strength to flex ratio for use as a golf club" (column 4, lines 59-62). In a preferred embodiment, the shaft is a single piece of solid core

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<sup>1</sup> It is clear from the underlying disclosure that the "solid-state" core is a solid core member.

fiberglass such as thermoset “E” type fiberglass. Herber does not disclose any additional layers on the shaft, with the exception of the handle 14.

Cosby discloses a golf club staff comprising a steel core 1 surrounded by a textile covering 2, which is surrounded by a casing 3, preferably made of hard wood. A body 4 made of bamboo, rattan or similar material is disposed about the casing 3. A tubular grip 6 is pressed inwardly on ribs 5 on the body 4.

The examiner’s position is that it would have been obvious, in view of the teachings of Herber and Cosby, to modify Okada to provide a solid core “to control the flexibility of the sporting rod member” (final rejection, page 3). The examiner states on page 4 of the answer that “[t]o one of ordinary skill in the art Cosby teaches a combination of a solid core and wrapped cloth rod and with Herber’s teaching of the solid core, Okada’s sporting rod is improved in its functionality.”

As stated by our reviewing court in In re Kotzab, 217 F.3d 1365, 1369-70, 55 USPQ2d 1313, 1316 (Fed. Cir. 2000):

Most if not all inventions arise from a combination of old elements. Thus, every element of a claimed invention may often be found in the prior art. However, identification in the prior art of each individual part claimed is insufficient to defeat patentability of the whole claimed invention. Rather, to establish obviousness based on a combination of the elements disclosed in the prior art, there must be some motivation, suggestion or teaching of the desirability of making the specific combination that was made by the applicant [citations omitted].

Okada is specifically directed to a tubular sporting rod formed of a plurality of prepreg layers particularly tailored to achieve the appropriate balance of flexibility and

strength, without the use of a solid core. Okada gives no indication that a solid core would be at all desirable or would improve the functionality of the sporting rod. The mere fact that solid golf club shafts were known in the art at the time of appellants' invention, formed either as a single piece as taught by Herber or as a solid core wrapped with a textile covering and wood and bamboo or rattan, would not have provided any suggestion to add a solid core to the tubular member of Okada, whose prepreg layers are already carefully designed to provide a sufficient balance of flexibility and strength. In fact, it would appear that the provision of a solid core in Okada's tubular member would inhibit the flexibility which is the object of Okada's invention. Where the proposed modification would render the prior art invention being modified unsatisfactory for its intended purpose, the proposed modification would not have been obvious. See Tec Air Inc. v. Denso Mfg. Michigan Inc., 192 F.3d 1353, 1360, 52 USPQ2d 1294, 1298 (Fed. Cir. 1999); In re Gordon, 733 F.2d 900, 902, 221 USPQ 1125, 1127 (Fed. Cir. 1984).

The examiner's "alternative" position as stated in the sentence bridging pages 4 and 5 of the answer that "one of ordinary skill in the art would modify Herber's sporting rod with a combination of Cosby and Okada's layered method" is equally unsound. The teachings of Herber and Okada indicate that the prior art has chosen two different approaches when forming sporting shafts using fiber-reinforced resin material. Herber's

approach involves a single-piece solid rod of, for example, fiberglass and Okada's approach involves tubular rods formed of wrapped prepreg layers of fiber-reinforced resin. As such, the combined teachings of Herber and Okada would have led one of ordinary skill in the art to select one of these approaches and would not, in our opinion, have suggested the combination of a solid core and a surrounding layer or layers of prepreg material. Cosby does evidence that the concept of a solid steel core surrounded by layers of different materials was known in the art at the time of appellants' invention but provides no teaching or suggestion, either alone or in combination with Herber and Okada, to use fiber-reinforced resin for such surrounding layers over a steel core.

For the foregoing reasons, we conclude that the combined teachings of Okada, Herber and Cosby would not have suggested the invention recited in claims 1-3. The examiner's rejection of claims 1-3 is thus reversed.

The additional teachings of Kusumoto and Hogarth, both of which are directed to tubular shafts without solid cores, do not cure the above-discussed deficiency in the combination of Okada, Herber and Cosby. It thus follows that the rejections of independent claim 4, which also calls for a solid rod comprising a solid-state core member and an outer layer formed of fiber reinforced resin, and claims 5-22, which depend from claims 1-4, must also be reversed.

CONCLUSION

To summarize, the decision of the examiner to reject claims 1-22 under 35  
U.S.C. § 103 is reversed.

REVERSED

IRWIN CHARLES COHEN  
Administrative Patent Judge

LAWRENCE J. STAAB  
Administrative Patent Judge

JENNIFER D. BAHR  
Administrative Patent Judge

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